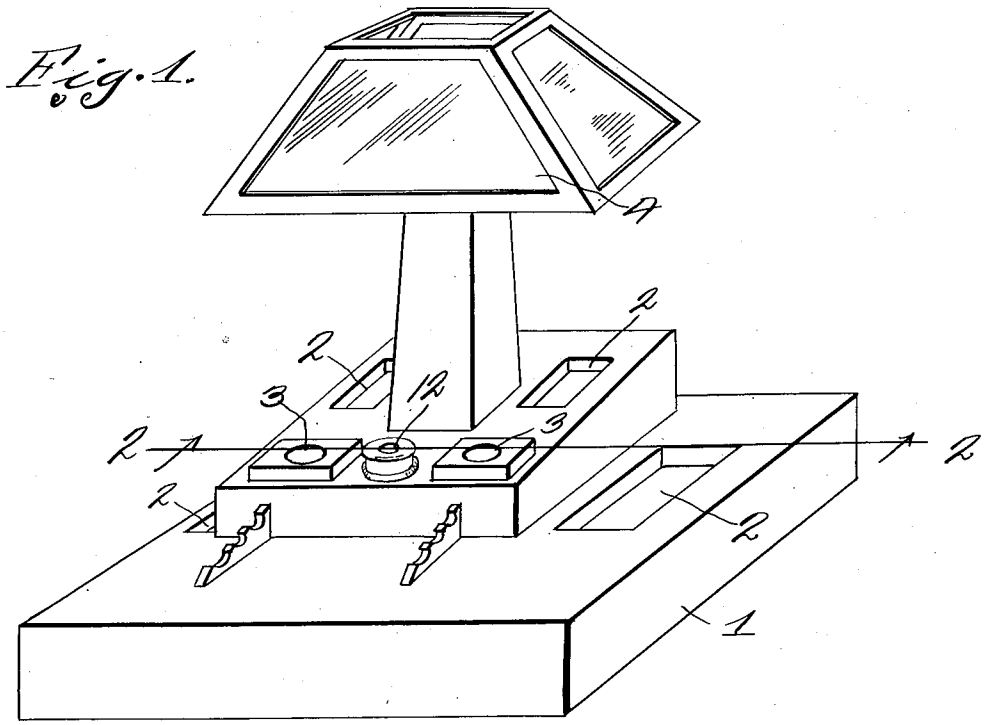
May 10, 1927. 1,627,705

K. A. JOHNSON

DESK SET AND PENCIL SHARPENER

Filed Jan. 23, 1923 2 Sheets-Sheet 1

Fig. 1.



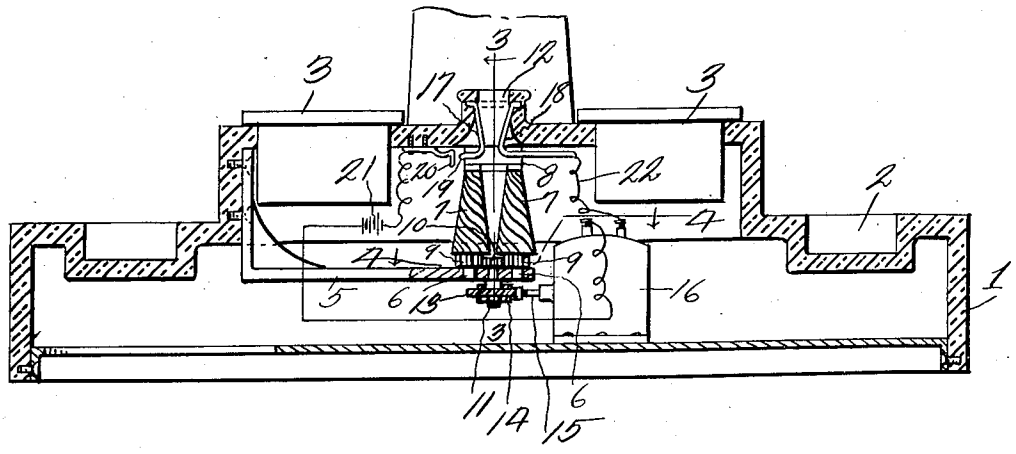


Fig. 2.

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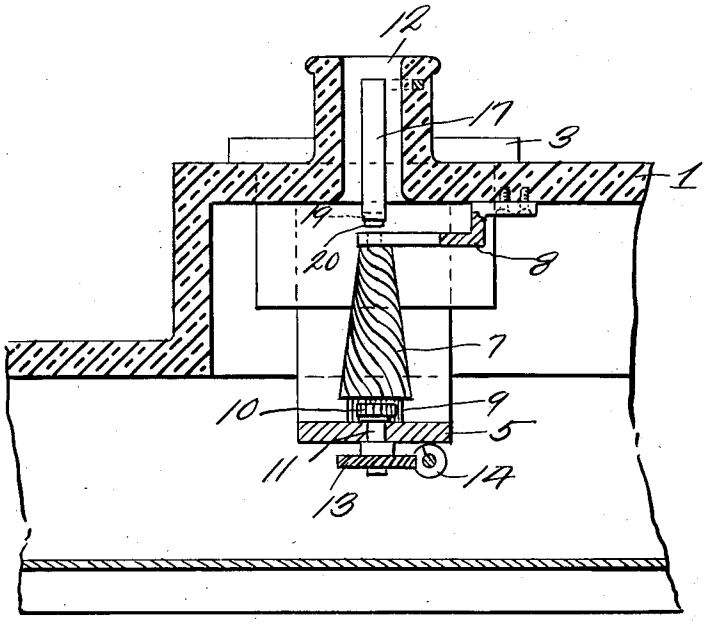


Fig. 3.

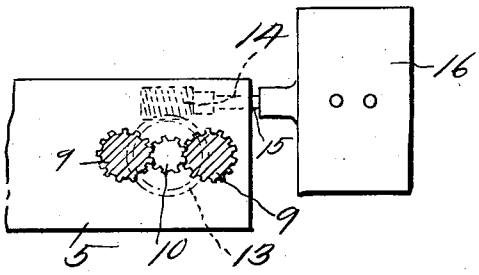


Fig. 4.

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UNITED STATES PATENT OFFICE.

KIRK A. JOHNSON, OF OMAHA, NEBRASKA, ASSIGNOR OF ONE-HALF TO RILEY F. BEACH, OF DOUGLAS COUNTY, NEBRASKA.

DESK SET AND PENCIL SHARPENER.

Application filed January 23, 1923. Serial No. 614,403.

The invention relates to desk sets and pencil sharpeners, and has for its object to provide a device of this character wherein the desk set is provided with a motor driven pencil sharpener, which is operated upon the placing of the pencil within the device for sharpening purposes and stopped upon the removal of the pencil.

A further object is to provide a pencil sharpening device preferably used in connection with a desk set, said sharpening device comprising frustoconically shaped pencil cutting rollers, gear connectings between said rollers and worm and worm gear connection between the gear connections and a motor. Also to provide contact means actuated upon the insertion of the pencil in a guide neck for starting and stopping the motor.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawings, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawing:

Figure 1 is a perspective view of the desk set showing the device applied thereto.

Figure 2 is a vertical transverse sectional view through the desk pad, showing the pencil sharpening mechanism.

Figure 3 is a detail sectional view taken on line 3—3 of Figure 2.

Figure 4 is a horizontal sectional view taken on line 4—4 of Figure 2.

Referring to the drawings, the numeral 1 designates the base of the device, which base is preferably rectangular shaped as shown, and provided with depressions 2, for the reception of various articles and ink wells 3. The device is provided with a desk lamp 4, which will eliminate the base. Supported on a bracket 5, disposed within the base, and having bearings therein are the pintles 6, of pencil sharpening cones 7, which cones have their upper ends rotatably mounted in bearings of a bracket 8. The bracket 8 and the bracket 5 support the cones during the rotation thereof during a pencil sharpening operation. The lower ends of the cones 7 are provided with gears 9, which gears mesh with an intermediate gear 10 carried by a vertically disposed shaft 11, which is also rotatably mounted in the bracket 5. It will be seen that when the gear 10 is rotated by a rotation of the shaft 11, the gears 9 will rotate in the same direction for imparting rotation to the pencil sharpening cones 7, thereby sharpening a pencil when placed in the pencil guide 12 and into engagement with the cones. The lower end of the shaft 11 is provided with a worm gear 13, which gear meshes with the worm 14 carried by a motor shaft 15, said shaft being rotated by a conventional form of electric motor 16. When a pencil is placed in the pencil guide 12 and forced downwardly, the spring contact arm 17 is forced outwardly as well as the spring arm 18. When the spring contact arm 17 is forced outwardly, its end 19 engages the contact member 20, which contact member is in circuit with the battery 21 and the motor 16, as well as in circuit with the arm 18, and the motor 16, through the wire 22, and consequently the motor is started and the sharpening cones rotated for sharpening the pencil. When the pencil is removed from the pencil guide 12, the spring arm contact moves out of engagement with the contact member 20, thereby breaking the circuit and stopping the motor, and consequently conserving power. The base 1 is formed from insulating material, such for instance as hard rubber or glass, therefore short circuiting is obviated.

From the above it will be seen that a pencil sharpener is provided which is particularly adapted for use in connection with desk sets, is entirely concealed within the base of the desk set and is constructed in such a manner, whereby when the pencil is placed within the pencil guide and forced downwardly, the pencil sharpener motor is started, and after the sharpening operation, the pencil removed, the motor is immediately stopped.

The invention having been set forth what is claimed as new and useful is:—

A pencil sharpener comprising spaced vertically disposed sharpening cones in parallel relation to each other, a support beneath said cones, gears carried by the

lower ends of the cones and smaller than the lower ends of the cones, a gear disposed between the cone gears in the plane thereof and meshing therewith, a shaft carried by said last named gear, means for rotating said shaft, said cones having their lower ends spaced whereby upon inserting a pencil between the cones it will be limited in its downward movement by engagement with the gear disposed between the cones.

In testimony whereof I hereunto affix my signature.

KIRK A. JOHNSON.